

PATENT
Serial No. 09/925,856

Docket No. 1232-4755

LISTING OF CLAIMS

Claims 1-17 are pending. Claims 1 and 9 are amended and claims 2 - 4 are canceled without prejudice or disclaimer. The following listing of claims will replace all prior versions and listings of claims in this application.

1. (Currently Amended) An image sensor unit comprising:
an illumination section including a light source and light guide to illuminate a document;
an image sensing element for converting an optical image of the document into an electrical signal;
a cylindrical lens for focusing the optical image on said image sensing element;
and
a frame for integrally holding said illumination section, said image sensing element, and said lens,
wherein a surface of said light guide has undergone antireflection treatment on a surface thereof on the document side, other than an irradiation part, is inclined with respect to a lower surface of the light guide.

2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Original) The unit according to claim 1, wherein said illumination section comprises a pair of illumination sections so disposed as to sandwich said lens.
6. (Original) The unit according to claim 1, wherein a distance from said image

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sensing element to the surface of said light guide on the document side is shorter than a distance from said image sensing element to an end of said lens on the document side.

7. (Original) The unit according to claim 1, wherein said frame is open on the document side.

8. (Original) An image reading apparatus comprising:

the image sensor unit defined in claim 1; and

a moving mechanism for moving a relative position between the image sensor unit and the document,

wherein the document is scanned by relative movement between the image sensor unit and the document.

9. (Currently Amended) The apparatus according to claim 8 further comprising

a transparent plate for placing and supporting the document, and

a support portion for supporting an end portion of said transparent plate,

wherein part of the image sensor unit is capable of being placed below said support portion.

10. (Original) An image sensor unit comprising:

a pair of illumination sections each including a light source and light guide to illuminate a document;

an image sensing element for converting an optical image of the document into an electrical signal;

a cylindrical lens for focusing the optical image on said image sensing element;

and

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a frame for integrally holding said illumination sections, said image sensing element, and said lens,

wherein said illumination sections are so disposed as to sandwich said lens, said light guides have exit ports for making light from said light sources emerge toward the document, and said exit ports are formed such that a peak of exit light is farther than a focal position of said lens for said image sensing element with respect to said image sensing element, and the focal position is included in a beam crossing region of exit beams from said pair of illumination sections.

11. (Original) The unit according to claim 10, wherein each of said light sources are fixed to an end portion of a corresponding one of said light guides.

12. (Original) The unit according to claim 11, wherein said light sources are fixed to different end portions of said light guides.

13. (Original) The unit according to claim 12, wherein said light sources have same characteristics and are disposed at point-symmetrical positions about an axis extending parallel to an axis of said lens from a substantially center of said image sensing element.

14. (Original) The unit according to claim 11, wherein said light sources are fixed to end portions of said light guides on the same side.

15. (Original) The unit according to claim 14, wherein said light sources are mounted on a single circuit board.

16. (Original) The unit according to claim 10, wherein said light sources comprise one or more LEDs of a single color or a plurality of colors.

17. (Original) An image reading apparatus comprising:

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the image sensor unit defined in claim 10; and

a moving mechanism for moving a relative position between the image sensor unit

and the document,

wherein the document is scanned by relative movement between the image sensor

unit and the document.